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Nilautama tricornis.

Nilautama tricornis, Melich. Notes Leyd. Mus. xxxvi. p. 114, pl. iii. fig. 8 (1914).

Hab. Java (*Jacobson*). Siamese Malay States; Patani (*Annandale & Robinson*).

Nilautama? cicadiformis.

Centrotus cicadiformis, Walk. Journ. Linn. Soc. Lond., Zool. i. p. 164 (1857).

Hab. Borneo.

In describing this terribly mutilated specimen Walker writes:—"Lateral horns of the thorax almost obsolete; no hind horn." The lateral pronotal processes are clearly broken off near their bases, and are not, therefore, "obsolete"; the posterior process has clearly been broken off at its base by the action of the inserted entomological pin. It has the appearance of a *Nilautama*, but the venation of the tegmina is a little more reticulate near the apical areas.

Terentius rolandi.

Terentius rolandi, Dist. Ann. & Mag. Nat. Hist. (8) xvi. p. 492 (1915).

I described this species from a specimen collected by Mr. R. E. Turner in N. Queensland. Mr. Froggatt, of Sydney, has now sent me another specimen collected in New Guinea, Binituri River (*Murray*).

XXXIII.—*Some Notes on the* Echimyinæ.

By Oldfield Thomas.

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In a recent paper * Mr. Goldman has drawn attention to the advisability of separating what he terms "*Phyllomys*," the spiny rats with simple laminated upper molars, from "*Loncheres*," those with more complex teeth, and in the advantage of this separation I entirely agree. The names of the two genera are not, however, as Mr. Goldman has put them, but respectively *Nelomys* and *Echimys*, for reasons which have been already explained †.

* P. Biol. Soc. Wash. xxix. p. 125 (1916).

† Ann. & Mag. Nat. Hist. ser. 8, vol. xviii. p. 240.

The spineless species with complicated *Echimys*-like teeth may be retained as a distinct genus, *Isothrix*, with type *I. bistriata*, and other species *villosa* (which perhaps= *bistriata*), *orinoci*, *picta*, and *pagura* [*I. pachyura*, Wagn., renamed later *I. crassicaudus*, was said to be probably the same as Lund's *Nelomys antricola*, which is a *Cercomys*]. At the same time, it may be observed that there appears to be no constant difference in skull or dentition between *Echimys* and *Isothrix*, though the marked distinction in the characters of the coat justifies the retention of the genus *Isothrix*, with which *Lasiuromys* is synonymous.

Of the type-species of *Echimys*, *E. chrysurus*, Zimm., of Guiana, the Museum possesses examples from the Upper Corentyn (*Sir R. Schomburgk*), R. Supinaam (*F. V. McConnell*), and Potaro Highlands (*Dr. C. Bovallius*), while a skin of the closely allied but smaller Amazonian species *E. paleaceus*, Licht., has been received from the Goeldi Museum, Para (locality, Peixe Boi), as also have two specimens of the "Toro" of the Lower Amazons, *Echimys grandis*, Wagn. (Santarem and Faro).

The other Guiana species, which was described by me in 1888 as *Loncheres guianæ*, is unquestionably *E. armatus*, Geoff., whose determination has been long in doubt, but whose locality (Cayenne) and external characters, as shown in Lichtenstein's figure, absolutely agree with those of *L. guianæ*, with which *L. castaneus*, Allen, is also synonymous. The species ranges from Trinidad and the mainland opposite eastwards to Cayenne, and also occurs on the Lower Amazon (Para, Cametá) and in Northern Maranhão (Miritiba). It is exceedingly variable in coloration, as is shown by our considerable series from British Guiana, where it is very common.

Finally, the three closely related species *semivillosus*, *punctatus*, and *carrikeri* occur in Eastern Colombia and Venezuela, but material does not exist for their proper comparison with each other.

In *Nelomys* (syn. *Phyllomys*) the upper molars consist of four simple transverse laminæ, which persist without coalescing with each other at different ages, this continued separation being due to the equal depth of the three transverse valleys dividing the laminæ. In *Echimys* and *Isothrix*, owing to the varying depth of the valleys, the laminæ coalesce and present a more complicated pattern, which varies at different ages.

Of *Nelomys blainvillei*, Jourdan, the genotype, the Museum possesses one of the original specimens collected on the Isla

de Deos, Bahia, by M. Blanchet, and sent by M. Pictet to the Zoological Society's Museum in 1838 (B.M. no. 55. 12. 24. 116). Unfortunately the skull is missing, one ramus of the lower jaw being alone preserved; but from this, as from the figures of the teeth published by Geoffroy and Wagner, there can be no doubt that this handsome species, of which no recent specimens have been recorded, has the laminated upper teeth above described. Whence it follows that the genus should be termed *Nelomys*, this name antedating *Phyllomys* by two years. All the species of the genus are spiny, for it now proves that the non-spiny species deserve generic separation from true *Nelomys*.

"*Loncheres*" *caniceps*, Günth., from Antioquia, is the first described of these latter, and, besides the type, the Museum contains an example from Bayone, North Ecuador, collected by Flemming and Miketta. Two other allied species, both from Panama, are *Loncheres labilis*, Bangs, and *Isothrix darlingi*, Goldman. All three have been placed in *Phyllomys* by Goldman.

But on examination of the teeth of the two specimens of *caniceps* above referred to, I have found that not only are the upper molars transversely laminated, as in *Nelomys*, but the lower molars are of similar structure, which is not the case in *Nelomys*, whose lower teeth, unlike the upper, are complicated, very much as in *Echimys*, with the laminæ variously forked and united. Excellent figures of two stages of the *Nelomys* molars were given by Hensel *, and from these the characters may be readily perceived.

But in *caniceps*, and presumably in *labilis* and *darlingi*, all the laminæ of the lower teeth are as completely separated as those of the upper teeth, and though the middle one of each molar is slightly bowed and angularly convex forward in the centre, yet there is no complexity or junction between different laminæ, as is the case in *Nelomys*.

On this account I have suggested † that a new genus, termed *Diplomys*, should be formed for *caniceps* and its relatives. Briefly stated, its diagnosis would be as follows:—

Lower molars simply and transversely laminated, duplicating the character of the upper ones.

Fur rather harsh, but not definitely spinous. Other characters as in *Nelomys*.

Genotype. *Diplomys caniceps* (*Loncheres caniceps*, Günth.).

Other species. *D. labilis* (Bangs), *D. darlingi* (Goldman).

Range. Panama, Colombia, and Ecuador.

* Abh. Ak. Berl. 1872, pl. i. figs. 11 & 12.

† Ann. & Mag. Nat. Hist. (8) xviii. p. 240.

It thus appears that the ranges of the genera of the present group are to a great extent separate, *Nelomys* being South Brazilian, *Echimys* and *Isothrix* occurring in Amazonia and the countries to the northwards, while *Diplomys* is alone found in Colombia and Panama.

With regard to the species of *Nelomys*, much confusion and ignorance exists, largely owing to the fact that so many of the earlier species were described without their exact localities being known, and often without reference to their dental characters. For these reasons it is impossible to identify with any certainty, and I would propose altogether to set aside, the animals bearing the specific names of *didelphoides*, Desm., *obscurus*, Wagn., and *unicolor*, Rüpp., until such time as a competent examination of the type-specimens shows what the names represent. Possibly, however, all three are the form of the Rio Janeiro region, for which I now provisionally use Lund's name *brasiliensis*.

Wagner's *nigrispina*, of São Paulo, is as yet unrepresented in the Museum; but, thanks to the kindness of Dr. H. von Ihering, we have three specimens of the largest species, *thomasi*, of the Island of São Sebastião, originally described as a *Mesomys*. And of the smaller southern forms, *medius* and *dasythrix* we have a number of specimens, including the type of the former and a co-typical skull from Hensel's collection of the latter.

From the most northern point of the range of the genus, north-west of Bahia, we have a fine series of a species which appears to be new, and may be called

Nelomys lamarum, sp. n.

Size small, about as in *brasiliensis* and *dasythrix*. General colour paler than in any other species, the general tone above little darker than "ochraceous buff"; sides clearer and paler, becoming more drabby on the sides of the belly. Underside generally pure white to the roots of the hairs from chin to inguinal region, but the white is of very variable breadth, either extending nearly the full breadth of the belly, narrowed to a mere middle line, which is the most usual condition, or altogether interrupted over the ventral area. Head rather greyer than back; whiskers and the inconspicuous tufts over the ears brown. Spines of back about 18 mm. in length, grey, with a blackish subterminal band and a buffy tip; hairs between the spines similarly grey, with bright buffy or ochraceous ends. Hands and feet buffy whitish. Tail about as long as the trunk, its base hairy, the remainder thinly hairy, the hairs not hiding the scales, the terminal tuft little

developed ; brown above, whitish below ; scales about ten to the centimetre.

Skull about as in *N. dasythrix*, the palatal notch perhaps deeper and sharper. Relation of back of nasals to end of premaxillary processes very variable.

Dimensions in the flesh :—

Head and body 220 mm.; tail 212; hind foot 33; ear 14.

Skull: greatest length 51; condylo-incisive length 45 ; zygomatic breadth 24; nasals 15·2 × 5; interorbital breadth 11; palatilar length 19 ; upper tooth-series 11·2.

Hab. Lamaraõ, Bahia, about 70 miles N.W. of Bahia city. Alt. 300 mm.

Type. Adult female. B.M. no. 3. 9. 5. 96. Original number 1414. Collected 24th May, 1903, by Alphonse Robert. Presented by Oldfield Thomas. Thirteen specimens.

This species is readily distinguishable from any other we have by its pale colour and less bushy tail. It had been provisionally determined as *didelphoides*, Desm., but there is really nothing to connect it with that species, which had no locality, is far smaller, and was stated to be of a brown colour, which no one would say of the present animal. Indeed, there is no evidence that *didelphoides* even belonged to the restricted genus *Nelomys*.

Of the original *Echimys hispidus*, "Geoff.," apparently first validly published by Desmarest in 1817, I have, by the kindness of Dr. Anthony, been privileged to examine the typical skull, still preserved in the Paris Museum. This shows that *E. hispidus*, about which so much confusion has arisen from time to time, belongs to none of the genera to which it has been hitherto referred, but is a *Mesomys*, apparently quite similar to *M. ecaudatus*, Wagn. As a result, the early and suitable name *hispidus* will happily replace the unfortunate term *ecaudatus*, given to a specimen which had lost its tail. Some notes on the characters of this rare genus were published in 1905 *.

Dactylomys.

A comparison of our specimens of *Dactylomys dactylinus*, Geoff., and *D. peruanus*, Allen, indicate that they might very well represent distinct subgenera. *D. dactylinus* has its long tail practically naked (apart from the base), the few fine hairs on it not at all hiding the scales, which are large and conspicuous. Indeed, it is the most prominently naked tail in the family, almost rivalling that of *Uromys* in this respect.

* Ann. & Mag. Nat. Hist. (7) xv. p. 590.

On the other hand, *D. peruanus* has a very hairy tail, which is really quite bushy for the basal half, and well clothed to the more or less tufted end, the scales being only just perceptible between the hairs on the subterminal fifth. This difference gives the animals quite a different appearance, and no doubt indicates a difference in habits.

In the teeth, while the outer re-entrant angles in the upper molars of *D. dactylinus* are of equal extension throughout, running from one-half to three-fifths across each tooth, in *D. peruanus* their angles, similar to those of *dactylinus* in the premolar and m^1, are in m^2 and m^3 of unequal extension, the posterior running across nearly to the inner edge of the tooth, while the anterior is as in the other teeth.

Under these circumstances I would suggest that *D. peruanus* should form the type of a new subgenus, which might be called *Lachnomys*.

The claws of *Lachnomys*, both before and behind, are absolutely as in true *Dactylomys*.

THRINACODUS.

This genus is very nearly allied to *Dactylomys*, but differs in the character of its claws, which are normal throughout, except that the second hind pair is modified into an oblique asymmetrical nail, as in many other members of the family. Its tail is intermediate in hairiness between that of true *Dactylomys* and of *Lachnomys*. The angles of its molars approach those of the latter form.

The specimens available come from three different regions —Merida, Bogota, and Antioquia, the last being the type-locality.

Those from Merida have distinctly larger skull and larger teeth, and might be distinguished specifically.

Thrinacodus edax, sp. n.

Colour and other external characters as in *T. albicauda*, but the tail completely white along the under surface, the terminal half above also white; line of demarcation fairly abrupt.

Skull larger than in *T. albicauda*. Molars broader and heavier. In an adult topotype of *albicauda* the breadth across the most distant points of the two premolars is 8·5 mm., and the breadth of each tooth, measured diagonally from the front of the two inner points to the second of the outer points, is 4·0 mm., while in *edax* these measurements are respectively 9·2 and 4·6 mm.; and the other teeth are all in proportion.

Dimensions of the type (measured on skin) :—

Head and body 225 mm. ; tail 345 ; hind foot 46·5.

Skull : greatest length 57 ; condylo-incisive length 51·4 ; zygomatic breadth 29·3 ; nasals 18·2 × 6 ; interorbital breadth 12·2 ; palatilar length 23 ; upper tooth-series 15·2.

Hab. Sierra de Merida. Alt. 2800 m.

Type. Adult male. B.M. no. 5. 7. 5. 7. Original number 17. Collected on 15th December, 1903, by S. Briceño. Three specimens.

On the other hand, the specimens from Bogota and Antioquia agree closely with each other in all important respects.

The last group on which I have any comment to make is that of the short-tailed spiny rats, which includes Azara's spiny rat, the first of the subfamily to be discovered, and nearly the last to have its technical name settled. For Fleming's selection of *E. chrysurus* as the type of *Echimys* has dispossessed *spinosus* of the generic name by which it has been so long known, and it must now bear Goeldi's term *Euryzygomatomys*.

But further consideration makes me think that its Brazilian relative, "*Echimys*" *laticeps*, differs so much from it as to justify the erection for it of a special genus, which might be diagnosed as follows :—

CLYOMYS, gen. nov.

Fore-claws fossorial, much longer than in *Euryzygomatomys*.

Bullæ hypertrophied, a great part of them visible external to the paroccipital processes when viewed from behind.

Molars proportionally small, the last upper soon losing the posterior transverse cleft, so that the tooth-surface is then circular, with one notch only on each side of it. In *Euryzygomatomys* the most worn teeth always show traces of a triilaminate structure.

Genotype. *Clyomys laticeps* (*Mesomys laticeps*, Winge * ; *Echimys laticeps*, Thos.).

Other distinctions between *spinosus* and *laticeps* are pointed out in my paper on the latter, which is the only member of the family with distinctly fossorial claws and hypertrophied bullæ.

* By the modern rules, the fact that Winge published the statement that "*Loncheres laticeps*, Lund=*Mesomys spinosus*, Desm.," made him the author of the specific name, even though he did not recognize the distinctness of the animal from *Mesomys spinosus*. His description and figures of the latter all refer to *Clyomys laticeps*.

Within *Euryzygomatomys* I now find it possible to distinguish from the true Paraguayan *spinosus* the form found in Santa Catherina as follows :—

Euryzygomatomys catellus, sp. n.

General colour and other external characters as in *E. spinosus*, except that on the under surface the white area is much reduced in extent. In *spinosus* the whole under surface from chin to inguinal region is white, and this colour extends nearly or quite over the whole breadth of the belly, where it grades, without very sharp line of demarcation, into the buffy or drab of the flanks. In *E. catellus*, on the other hand, the chin and throat are suffused with brownish, there is a marked brown patch in the middle of the chest, and the white of the belly is reduced to a comparatively narrow median area owing to the encroachment on it of the brownish or drabby flank-colour, from which its line of demarcation is somewhat abruptly defined.

The skull is, on the whole, similar to that of *E. spinosus*, except that the **V** of the palatal notch is less excessively narrow and pointed, and does not extend quite so far into the palate—at most to the posterior third of m^2, and more often only to the hinder edge of that tooth.

Dimensions of the type (measured on the spirit-specimen before skinning) :—

Head and body 245 mm. ; tail 53 ; hind foot 35 ; ear 18.

Skull : greatest length 49 ; condylo-incisive length 46·2 ; zygomatic breadth 27·3 ; nasals 14·3 × 6·5 ; interorbital breadth 11 ; palatilar length 19·2 ; upper tooth-series 10.

Hab. Santa Catherina. Type from Joinville.

Type. Adult male. B.M. no. 9. 11. 19. 30. Collected by W. Ehrhardt. Four specimens.

I have provisionally used a binomial name for this animal ; but intermediate forms may prove to exist in the little-known country between its type-locality and that of *E. spinosus*, and it will then have to be regarded as a subspecies.

XXXIV.—*On the Classification of the Cavies.*

By Oldfield Thomas.

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Mr. Wilfred Osgood has recently published a suggested revision of the classification of the Cavies *, and has divided

* Field Museum Publ. Zool. x. p. 194 (1915).